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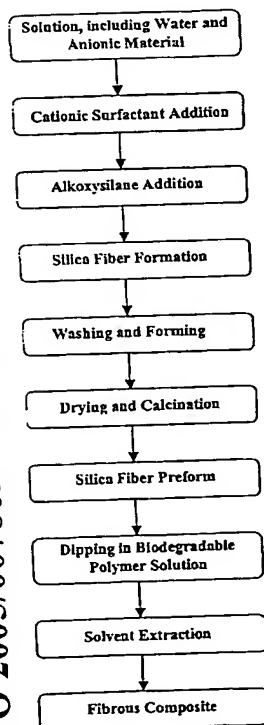
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(54) Title: **FIBROUS COMPOSITE FOR TISSUE ENGINEERING**

(57) Abstract: Provided are fibrous composites prepared by methods of the present invention, comprising oxides and biodegradable polymers, in which the fibers are made of aerogel-like oxide materials having nanometer-sized pores. The fibrous composition advantageously has, at least, the following characteristics: (i) a very high nanoporous surface area, which also permits nucleation of crystallites; (ii) mesoporous / macroporous interspatial networks between the fibers, providing high bioactivity and a high transport rate; (iii) macropores for natural bone-like tissue growth; (iv) good mechanical properties for handling and for implant support; and (v) biodegradability for implant dissolution and time-variable mechanical properties. Further provided are methods for using the bioactive biodegradable fibrous composites as osteogenic composite materials for tissue engineering, tissue re-growth, bone implants, and bone repair, and/or for the delivery of drugs or therapeutic compounds.



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